SCIENCE GRADE 3

SPRING BREAK LEARNING

MARCH 10-14

2025

The Department of Curriculum & Instruction

Hello MSCS Family,

This resource packet was designed to provide students with activities that can be completed during the Spring Break Academy independently or with the guidance and supervision of family members or other adults. The activities are aligned to the TN Academic Standards for Science and will provide additional practice opportunities for students to develop and demonstrate their knowledge and understanding. A suggested pacing guide is included. However, students can complete the activities in any order over three days. Below is a table of contents that lists each activity.

Table of Contents

3rd Grade Science: Hurricane Katrina	
Grade Level Standard(s)	3.ESS2.3: Use tables, graphs, and tools to describe precipitation, temperature, and wind (direction and speed) to determine local weather and climate.
Caregiver Support Option	Help your student by guiding them through the reading.
Materials Needed	*Hurricane Katrina* Article
Essential Question	How does weather change?
Learning Outcome	Students will be able to identify different weather patterns.

Name _____ Date _____

HURRICANE KATRINA

Hurricane Katrina started on August 23, 2005. It was a big storm. It had strong winds. It was one of the biggest storms in history.

Many people were told to pack their bags. They were told to get into their cars. They were told to go to other cities.

Some people did what they were told. They drove away and were safe.

Many people did not want to go. They said they would not go away from their homes. They thought they would be safe.

The storm came, and it was very bad. It was worse than they thought. They were not safe. There was water all over the city. The wind blew houses away. It blew cars down the street. Many stores were gone.

Hurricane Katrina did not care about the people. She was a strong storm. She blew and blew. She made a big mess and then she left a mess for the people to clean up.

STORY QUESTIONS

1. An **antonym** is a word that means the opposite. What is an antonym for *safe*?
- a. unsafe
- b. bad
- c. ugly
- d. mean

2. Why did some of the people die in the storm?
- a. They got stuck under cars.
- b. They went to wrong hotel.
- c. They did not leave when they were told.
- d. They had too many things with them.

3. Which word best describes Hurricane Katrina?
- a. strong
- b. nice
- c. soft

3rd Grade Science: What Are Weather Fronts	
Grade Level Standard(s)	3.ESS2.3: Use tables, graphs, and tools to describe precipitation, temperature, and wind (direction and speed) to determine local weather and climate.
Caregiver Support Option	Help your student by guiding them through the directions.
Materials Needed	Clear glass cooking dish, blue food dye, cooking oil, water, scissors, cardboard covered with clear plastic wrap, transparency/page of Weather Fronts
Essential Question	How does weather change?
Learning Outcome	Students will be able to identify different weather patterns.

What Are Weather Fronts?

Teacher Information

Storms are caused when large air masses of different temperatures and moisture levels collide. The point where these two air masses meet is called a *front*. If cold air advances and pushes away the warm air, it forms a cold front. When warm air advances, it rides up over the denser, cold air mass to form a warm front.

The following demonstration illustrates what happens when a warm air mass collides with and replaces a cold air mass. The cooking oil represents a warm air mass and the colored water represents cold air mass.

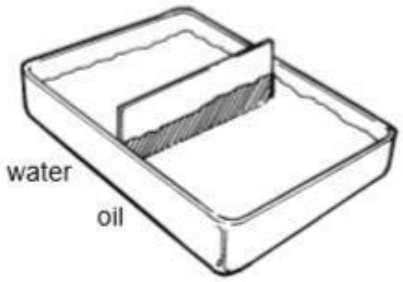
Overview: *Students will learn about weather fronts.*

Materials

- clear glass cooking dish
- blue food dye
- cooking oil
- water
- scissors
- cardboard covered with clear plastic wrap
- transparency of Weather Fronts (page 31)

Activity

1. Cut the cardboard so that it forms a tight barrier between the right and left sides of the cooking dish. Wrap it with plastic wrap and seal the edges together as tight as possible. Place the barrier into the dish as shown in the drawing.
2. On the right side of the barrier, pour cooking oil into the dish so that it almost fills the right side.
3. On the left side of the barrier, pour water into the dish so that it almost fills the left side. Add a few drops of blue food dye to the water.
4. When the liquids appear calm, quickly lift the barrier and watch what happens.

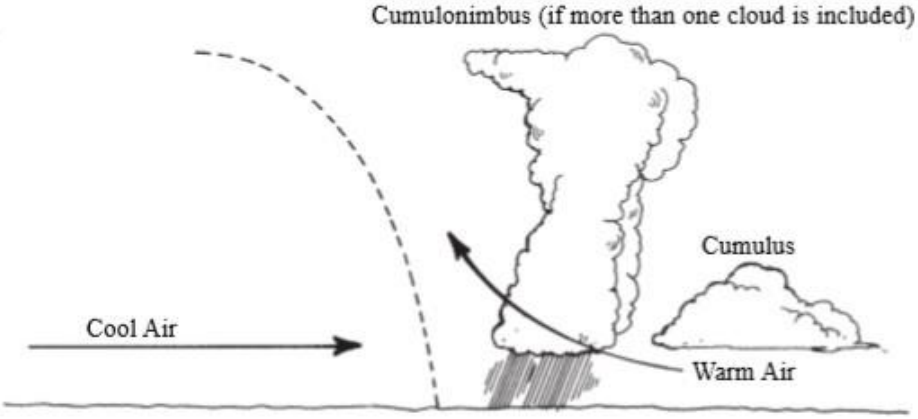


What Are Weather Fronts? *(cont.)*

Weather Fronts

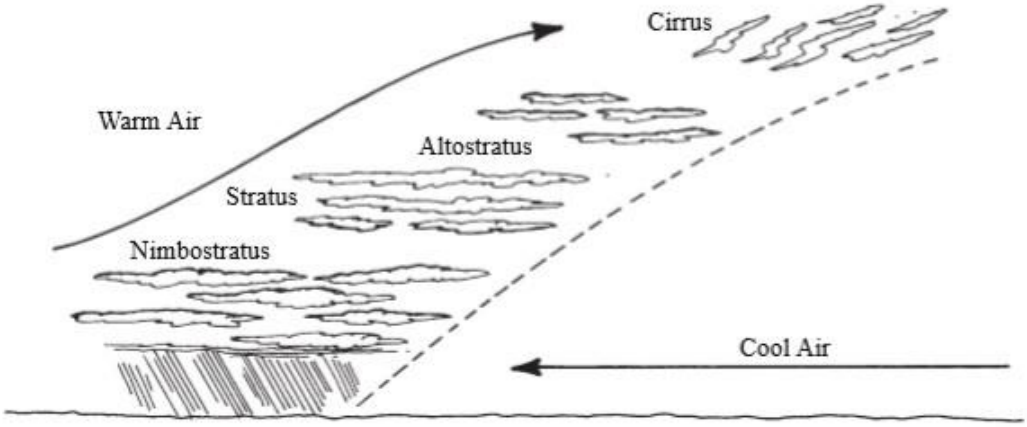
Cold Fronts:

Cold fronts form when dense masses of cold air advance into a mass of warm air and push the lighter warm air up out of its way. As the warm air rises, it often forms cumuli or cumulonimbi. These clouds are responsible for thunderstorms. This is why thunderstorms can often be seen along the leading edge of a cold front. Cold fronts typically move in a southeasterly direction across the United States.



Warm Fronts:

When a warm air mass runs into a cold air mass, the warm air is forced to rise above the cold air. The transition zone where a warm air mass collides with and is replacing a dense cold air mass is called a *warm front*. This collision causes slowly rising clouds, such as cirri, altostrati, and strati. Generally, along the trailing edge of the warm front, nimbostrati are formed, which bring a drizzle or slow, steady rain to the area. Warm fronts typically move in a northeasterly direction across the United States.



3rd Grade Science: Reducing the Impact of Flooding	
Grade Level Standard(s)	3.ESS3.1: Explain how natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) impact humans and the environment.
Caregiver Support Option	Help your student by guiding them through the directions.
Materials Needed	*Reducing the Impact of Flooding* Article
Essential Question	What are natural hazards and how can they change environments?
Learning Outcome	Students will describe and define how natural hazards affect environments, and they will identify ways that humans can reduce the impacts of natural hazards.

Reducing the Impact of Flooding

by ReadWorks

Photo Credit: AP Images

Photograph of people walking through flooded area

Floods are the most common weather-related disaster. In fact, 56% of people who face weather-related disasters are affected by flooding. The United Nations (UN) has found that over 157,000 people have died in flood storms over the past 20 years. The UN has also found that 2.3 billion people have been negatively impacted by flooding during this period.

Photo Credit: NOAA/National Weather Service

Photograph of truck floating in water

What are the impacts of flooding on people's lives? Flooding can ruin farms, which means that farmers lose their crops. This can lead to starvation. For example, rural India has suffered from major floods for many years. The UN studied this region and discovered that many of the people were underweight. The UN also discovered that babies who grew up in flooded areas suffered from malnutrition. People suffer from malnutrition when they don't eat enough nutritious food. Floods can also ruin homes and leave people homeless. When people lose their farms and homes to flooding, it is very difficult to survive and remain healthy.

Photo Credit: Mark McCourt, CC-BY-SA-3.0

Photograph of sandbags blocking water in front of house

There are some strategies to reduce the impacts of flooding, however. Most homes have gaps where water can seep in. One strategy is to cover these gaps with bags full of sand. The sandbag will block the water from seeping through the gaps. The sandbags are most effective at blocking water when they are stacked into a pyramid. Another strategy is to clean out the gutters before the storm hits. Gutters help to redirect water away from a home. If leaves clog the gutters, the gutters will not work. A third strategy is to buy a sump pump. A sump pump pumps water out of a flooded home.

Name: _____ **Date:** _____

1. What is the most common weather-related disaster?

A. starvation

B. flooding

C. malnutrition

D. clogged gutters

2. The text explains that flooding can ruin farms. What is the effect of farms being ruined?

A. People can starve and become underweight.

B. People can lose their homes and become unhealthy.

C. People can clean out gutters and redirect water.

D. People can buy a sump pump and pump water out.

3. Read these sentences from the text.

"Flooding can ruin farms, which means that farmers lose their crops. This can lead to starvation. For example, rural India has suffered from major floods for many years. The UN studied this region and discovered that many of the people were underweight."

What conclusion can you make based on these sentences?

A. People were underweight in India because of the UN.

B. Flooding happens after farmers lose their crops.

C. Flooding ruined many farms in India for many years.

D. India suffered from major floods because of starvation.

4. Read these sentences from the text.

> Floods can also ruin homes and leave people homeless. When people lose their farms and homes to flooding, it is very difficult to survive and remain healthy.
>
> [. . .]
>
> There are some strategies to reduce the impacts of flooding, however. Most homes have gaps where water can seep in. One strategy is to cover these gaps with bags full of sand. . . . Another strategy is to clean out the gutters before the storm hits. Gutters help to redirect water away from a home. . . . A third strategy is to buy a sump pump. A sump pump pumps water out of a flooded home.

What can you infer about the impacts of flooding on a home?

A. A home is ruined when its inside gets flooded and stays flooded.

B. A home is ruined when its inside gets flooded but then has water pumped out.

C. A home is ruined when it gets flooded outside of the home.

D. A home is ruined when sandbags block water from entering.

5. What is the main idea of this text?

A. Flooding is the most common weather-related disaster, with 56% of people facing weather-related disasters affected by flooding.

B. A lot of people in rural India were underweight, and many babies from flooded areas suffered from malnutrition.

C. Flooding can have very negative impacts on people, but there are strategies to reduce some impacts.

D. There are a few strategies to reduce the impacts of flooding, namely using sandbags, gutters, and sump pumps.

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Nonfiction: Current Events

DAILY Warm-Up

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Nonfiction: Current Events

DAILY Warm-Up

Answer Key

Hurricane Katrina

1. a
2. c
3. a

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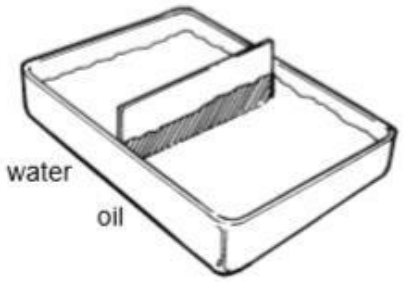

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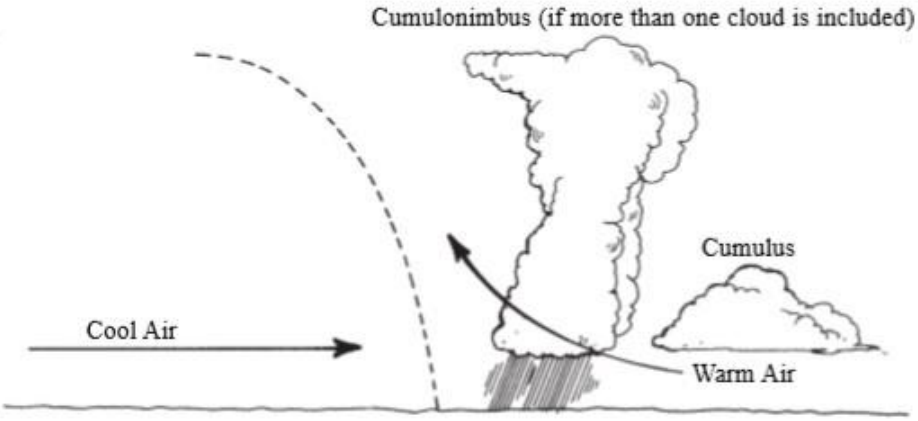

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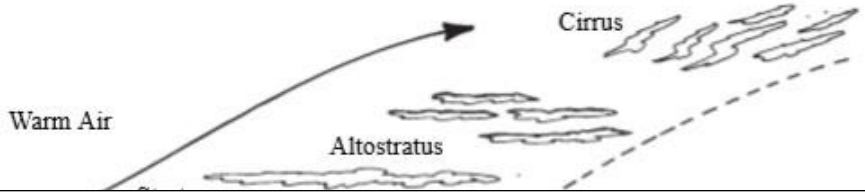

Answers

- Have the students describe what they saw happen. (The cooking oil rose above the colored water when the barrier was lifted.) Explain that the cooking oil was like a warm air mass and the water was the cold air mass. Oil is less dense than water, just as warm air is less dense than cold air. Thus, when the two air masses of different temperatures met, the warmer one rose over the colder one.
- Tell the students that on Earth, warm and cold air masses are in constant motion due to the winds, particularly those winds in the upper atmosphere.
- Show the transparency Weather Fronts and discuss it with the students.

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